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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/692,424
Filing Date: October 22, 2003
Appellant(s): MILLER ET AL.

Michael T. Rosato
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 5, 2006 appealing from the Office action mailed June 15, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,213,995	STEEN ET AL	4-2001
5,052,105	MISCHE ET AL	10-1991
6,186,978	SAMSON ET AL	2-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

As set forth in the Advisory Action of August 8, 2005, the double patenting rejection set forth in the final rejection mailed June 15, 2005 has been overcome by the filing of the acceptable terminal disclaimer on July 21, 2005.

Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steen in view of Mische. The patent to Steen discloses a catheter comprising a catheter body comprising at least one polymeric tubular member 32 having embedded therein a braided tubular structure 14 which can be provided with wire elements such as 244 a-d which are woven and can be wires for transmission of signals over the conductive wires, where the tubular member is a polymeric tubing, another tubular polymer member 38 is disposed over the braided structure, and the catheter is of a size and shape to be used in blood vessels. The patent to Steen discloses all of the recited structure with the exception of forming the woven members of tubular members each having longitudinal lumens. The patent to Mische discloses that it is old and well known in the art to substitute hollow conductive tubes 19 in place of conductive wires 14, and that such can be used interchangeably in catheters where such are equally useful conductive means. It would have been obvious to one skilled in the art to modify the braided tubular structure in Steen by substituting hollow tubular members for the conductive wires as suggested by Mische where conductive tubing is interchangeable with conductive wires in catheter uses, where such provides another means to transmit something from one end of the catheter to the other which would

expand the usefulness of the product and thereby make it more valuable to the user thereby saving money by providing a more versatile catheter.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Samson (978) in view of Mische. The patent to Samson discloses a catheter comprising a catheter body comprising at least one polymeric tubular member 236 having embedded therein a braided tubular structure 238 which can be provided with metal wire elements which are where the metal useable is a superelastic alloy of nickely and titanium, where the tubular member is a polymeric tubing, another tubular polymer member 240 is disposed over the braided structure, and the catheter is of a size and shape to be used in blood vessels where a balloon portion 318 in the form of a plenum is provided at the end of the catheter body. The patent to Samson discloses all of the recited structure with the exception of forming the solid wires of hollow tubes, and providing inflation media there through. The patent to Mische discloses that it is old and well known in the art to substitute hollow conductive tubes 19 in place of conductive wires 14, and that such can be used interchangeably in catheters where such are equally useful conductive means. It would have been obvious to one skilled in the art to modify the braided tubular structure in Samson by substituting hollow tubular members for the solid wires as suggested by Mische where tubing is interchangeable with solid wires in catheter uses, where such provides another means to transmit something from one end of the catheter to the other which would expand the usefulness of the product and thereby make it more valuable to the user thereby saving money by providing a

more versatile catheter. It is considered merely intended use to utilize the hollow elements for any type of fluid transmission including for transmission of inflation media as such is merely intended use and the modified structure of Samson would be capable of such.

(10) Response to Argument

With respect to appellants argument A, specifically with regards to the teachings of Mische, the reference itself dates back to October 1991 which is some 10 years prior to the patent to Steen which it is used to modify, thereby teaching that at least 10 years prior to Steen it was known in the art to provide solid wires for transmission of signals or hollow tube elements in catheters, therefore such teachings are of what is old and well known in the art at the time Steen was issued, and that it was emerging technology in 1991, in diagnostic catheters to utilize wires to transmit signals from end to end in a catheter (col. 1, lines 24-32). Mische goes on further to state that such conductors can take a variety of forms, such as twisted conductors further defined in column 3, lines 10-14 to be any of metal wires or optical glass fibers, and "alternatively, the conductors 14, instead of being electrical or optical conductors as just described, may be micro tubes 19" and further "would provide operative connection for transmission of pressure control to in body sensors" (col. 3, lines 15-21) which are stated early as used with catheters, where such can be provided in a polymer base (see figure 12 and col. 3 lines 40-46). Mische clearly teaches that the tubes can be used in place of solid wires to allow for transmission of pressure fluids through the catheter, thereby teaching the desirability of using tubes in place of wires to transmit other signals, that of pressure fluids, to sensors

at the other end of the catheter. The fact that Mische discloses "alternatively" when describing conductors 14, and provides hollow tubes as an alternate form for these conductors as opposed to the previously recited wires is a clear suggestion of interchanging the two types of conductors.

With regards to the teachings of Steen, which need to be understood in order to discuss the combination of Steen with Mische, Steen sets forth transmission elements (see title of Steen) which are provided in a braided form in the wall of a catheter to transmit signals through the catheter. As set forth in column 3, lines 19-22 discuss a plurality of braid elements 14 forming a braid 16 which include signal transmitting elements 18 and structural elements 20, where such braided structure is embedded in the wall of the catheter. It is the examiners position that based upon the teachings of Mische of alternate forms of conductors including wires or hollow tubes in a catheter that one skilled in the art would be motivated to substitute one type of conductor for the other. It is immaterial as to whether Steen teaches the need for additional lumens, Mische is teaching that tubes can be used as a substitute to wires to transmit signals in different manners including by pressure of fluids. It would not destroy the reference of Steen to provide such with tubes in place of wires and therefore would provide an alternate manner to transmit signals of a different type in the catheter, where Steen teaches embedding such in the wall of the catheter. As per MPEP 2144.06 a prima facie case can be supported by combining equivalents known for the same purpose where Mische acknowledges that microtubes can be used for the same type of signal transmission elements as that taught in Steen, and that there are advantages to using

microtubes for its ability to transmit signals via pressurized fluids for use with specific types of body sensors, thereby providing the motivation to combine the references, where Steen teaches embedding the braided structure in a resin by stating "provided within the wall of the tubing" in column 3, line 19, where the wall is later defined in lines 42-56 to be formed of resins. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The prior art clearly supports this combination as set forth above. There is no teaching against the combination by substitution of one equivalent element for another, such would only require routine skill in the art to modify the catheter of Steen to utilize the tubes of Mische if needed. The examiner is not using Mische to teach substituting the entire bundle structure but utilizing the teachings of Mische that set forth that microtubes are equivalent signal transmission elements used in catheter applications, where Steen provides all other structure, and the substitution of one equivalent element for another under the teachings to do so is obvious to one skilled in the art. Mische may teach running such signal cables through a lumen, however, Steen teaches that such is not required when one incorporates the transmission elements into the braided structure embedded in the catheter wall. Since Mische teaches such microtubes can be provided

embedded in plastic, one skilled in the art would find it obvious to substitute a microtube element for the wire transmission elements in Steen. It should be noted that appellant is trying to include the entire cable structure of Mische, but Mische does not teach substituting one entire bundle of elements or cable for the other but rather teaches substituting a microtube for a wire, where in figure 12 such is only done for two wires in the bundle, therefore Mische is clearly teaching replacing a wire with a microtube on a one to one basis, not as a bundle as appellant is trying to argue. Therefore the teachings of Mische being used by the examiner are that of replacing a signal transmission element such as a wire as set forth in Steen in the braided structure of Steen, with a microtube used in place of the wire in the woven structure of Steen, where this entire substitution is supported by Mische. Appellants attempt to combine all parts of Mische with Steen would be impossible to combine, however, one skilled in the art would not feel motivated to attempt to use all facets of Mische into Steen, but would find it obvious based on Mische stating the substitution of a microtube for a transmission wire is known, to replace each wire transmission element of Steen with a microtube as this is the substitution supported by Mische, not the use of the entire microcable for the transmission element. The only feasible substitution on that level would be replacing the entire woven structure which is what makes up the entire transmission system of Steen with the microcable of Mische which is not what Mische or the examiner suggests should be done.

With regards to argument B, the examiner stands by the teachings of Mische above. The only change to this rejection is the base reference. The patent to Samson

discloses a catheter formed with wire reinforcements 238 provided in a braided structure embedded in a wall. The braid can be made from a variety of structures including plastics and stainless steel wires or metal ribbons, including malleable metals and alloys (col. 9, lines 32-39 and col. 10, lines 8-25). Mische clearly sets forth in column 3, lines 10-14 that the conductors 14 can be formed of metal wire such as "copper, gold or silver plated copper, or aluminum" which are also known malleable metals. Therefore, as set forth above Mische discloses it is obvious to substitute for a solid metal wire of a malleable metal and to utilize a microtube for this substitution, thereby teaching the motivation to combine the teachings of the references, where both Mische and Samson are dealing with catheter structures. The wires of Samson or inherently conductive elements made of materials and in the form of wires the same as the wires in Mische, and Mische teaches the substitution of microtubes for such conductive elements. Inherently the microtubes will provide some structural reinforcement and Samson does not require any specific amount of structural reinforcement especially when stranded wires or plastics can be used in place of the solid wires as well, and set forth in Samson. The suggestion that these types of elements recited in Samson to provide more flexibility would provide any more strength than the tubes in Mische is unsupported by fact. Also, there is no strength requirement set forth in applicants claims so any suggestion that the substitution of microtubes would not provide the needed support is immaterial to whether the references can be combined to cover the limitations of appellants claims. The teachings of Mische would provide an improvement over Samson when it is known in the art that catheters

predominantly require signals to be transmitted from one end of the catheter to the other (such is supported by Steen if one would require such a statement to be supported) and by providing the teachings of Mische to substitute microtubes for wires in an embedded environment one would find it obvious to replace wire elements of the braid in Samson with hollow tubes which would thereby provide for the transmission of fluids, such as transmission signals, from one end of the catheter to the other. The only teaching required of Mische is that of substitution of one element for another, and as supported by the argument above, that is considered to be clearly taught in Mische.

For the same reasons as above, the examiner is not suggesting using the entire cable as a substitution for a single wire, but merely substituting one tube for one wire as suggested by Mische. The same arguments the examiner applied above are applicable to this combination as well, including with regards to hindsight.

With respect to the arguments directed at claims 8 and 9, it should be noted that the above rejection was only applied to the combination of Samson and Mische, the reasoning behind this is because Samson discloses use of the catheter with balloons (column 13, line 63-column 14 line 9), which as set forth in the rejection can also include a plenum as formed by inflation membrane 318. Therefore the reference to Samson discloses the use of these structures in combination with a catheter. There is no other argument other than Samson doesn't deal with these structures, however as set forth in the rejection these structures exist in Samson, and therefore this argument is moot. See the examiners rejection for further clarification on this point and the examiners position.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

James F. Hook

Conferees:

K. Shaver

E. Keasel